SBIR GUIDE: NASA *Updated January 2013*

This guide is for potential applicants to the National Aeronautics and Space Administration (NASA) Small Business Innovation Research (SBIR) program. The document identifies unique aspects of NASA's SBIR program, describes the nature of its topics, and links readers to additional agency resources. When used in conjunction with MTIP's Profile of a Good Candidate, this guide will help prospective applicants determine quickly whether to pursue funding under the NASA SBIR program and how best to approach a proposal.

THE SBIR/STTR PROGRAMS

The federal Small Business Innovation Research (SBIR) program is a source of early-stage R&D seed capital for small, tech-based U.S. companies. Through 11 different participating agencies, this program offers grants or contracts to support serious R&D and commercialization of technologies of interest both to the government and to the company.

SBIR funding does not have to be matched or repaid by the small business. The award monies can be used to fund most costs associated with the R&D project and up to 7% profit. The company maintains ownership of any new intellectual property, and the government retains certain rights to use the technology.

SBIR is a three-phase program. Phase I is to establish the technical and often commercial feasibility of the proposed technology. Phase I awards can be as high as $225,000, normally for a period of up to nine months. Phase II is to perform more in-depth R&D on the technology, typically developing and demonstrating a prototype. Phase II awards range as high as $1.5 million for a period of up to two years. The objective of Phase III is commercialization of the technology. This phase is non-funded, though some agencies offer extra assistance in the form commercialization support programs.

In SBIR Phase I, up to 33% of the direct plus indirect costs of the budget may go to outside consultants/subcontractors; in Phase II, this figure rises to 50%. In addition, for both Phase I and II, the Principal Investigator must be greater than 50% employed by the company from the time of contracting throughout the duration of the project.

Each of the 11 participating agencies operates its own version of the SBIR. Within any given agency, the rules and requirements frequently change from one solicitation to the next. Prospective applicants must monitor closely each targeted agency's solicitations.

Overall, agencies report that the chance of winning a Phase I award ranges from is ~7% to ~15%. Well-qualified Montana applicants can substantially improve these odds by working closely with the no-cost services offered by the Montana Technology Innovation Partnership (MTIP). If not currently enrolled for MTIP services, see the information box at the end of this Guide.

NASA'S SBIR PROGRAM

NASA publishes its annual solicitations at: http://sbir.gsfc.nasa.gov/SBIR/SBIR.html. The NASA SBIR and Small Business Technology Transfer (STTR) programs are combined under a single solicitation with separate research areas of interest. The solicitation generally opens mid-September and closes by the end of November. Firm-fixed-price contracts are negotiated with awardees in February. Historically, the percentage of Phase I proposals to awards is approximately 13-15% for SBIR and STTR, and approximately 35-40% of the selected Phase I contracts are competitively selected for Phase II follow-on efforts

To be eligible for selection, a proposal must present an innovation that meets the technology needs of NASA programs and project. The technology must have significant potential for successful commercial transition into products and services for NASA mission programs and other federal and non-federal markets. NASA's ultimate objective is to achieve infusion of the technological innovations developed in the SBIR/STTR programs into its Mission Directorates programs and projects. The Mission Directorates include Aeronautics Research, Human Exploration and Operations, and Science. Applicants need to become familiar with where their technology will be the best fit.

The maximum Phase I contract value is $125,000 with a 6 month period of performance, and the maximum for Phase II is $750,000 for a 24 month period of performance. NASA also offers a Phase II Enhancement program (Phase II-E) for which, eligible firms must secure a third-party (non-NASA) investor and NASA matches dollar-to-dollar, up to $125,000. Steps may be taken to use a NASA patent or software as part of the research project. Proposals are submitted via the Proposal Submissions Electronic Handbook at http://sbir.nasa.gov.

IDENTIFYING AN APPROPRIATE TOPIC

NASA research and technology areas of interest are identified annually by the Mission Directorates. The Directorates identify high priority research and technology needs for their respective programs and projects. The needs are explicitly described in the topics and subtopics descriptions developed by technical experts at NASA's Centers.

Challenges and program direction for each Mission Directorate is included in the solicitation, followed by the Directorate topics and subtopics. To achieve more focused solicitations, NASA now rotates subtopics under the Directorates every other year. It provides detailed explanations as to the technologies and methods of interest. STTR topics are detailed separately under the same solicitation as used for the SBIR program.

CONTACTING THE AGENCY

Applicants are strongly encouraged to communicate directly with the NASA Program Manager (PM) listed in the solicitation. The PM is permitted to address questions about the program or provide technical assistance related to project ideas. After the release of the annual solicitation, the PM is no longer available for such consultation.

A good way to approach the PM is by sending a 1-2 page write-up on the prospective project technology and scheduling a follow-up phone discussion. This write-up should begin with a clear, concise statement of the problem to be addressed and how that problem is presently being handled. Then describe the team and its credentials, the technology being proposed as a solution including an explicit statement of its innovation, and a brief explanation of the commercial potential. Be prepared with many questions to ask of the PM. This is not the time to provide a long-winded explanation of the company and its technology.

PREPARING/SUBMITTING THE PROPOSAL

The purpose of the proposal is to provide sufficient information to persuade reviewers that the proposed research offers a unique and sound approach to addressing the need expressed in the NASA solicitation. The proposal should be written at a level of quality suitable for publication. Following are general recommendations for ways in which applicants can enhance their chances for success:

- **Start early.** Many aspects of the proposal can be planned and even drafted well before NASA ever releases its announcement. Valuable insights can be gained from reviewing past award abstracts and the websites of the successful applicants. NASA posts the past Phase I and Phase II awards at: http://sbir.gsfc.nasa.gov/SBIR/awards.htm.
- **Read the entire solicitation.** Retrieve the program solicitation as soon as it is available and determine if your technology is a fit with the topic guidelines. One person on the proposal team must be responsible for reading the instructions thoroughly, highlighting all the major and minor requirements, and initiating a proposal template. Sample proposals and NASA contract models can be viewed at: https://sbir.gsfc.nasa.gov/sbir/firm_library/index.html. These should be treated as general examples that are not necessarily, perfectly oriented to guidelines under the present solicitation.
- **Develop a project plan that envisions both the Phase I and the Phase II R&D activities.** Sharpen the proposed Phase I technical objectives and outline a work plan. Review these pieces to determine whether the project matches well with the topic and agency guidelines. Give careful consideration to selection of the project investigators, including consultants and/or subcontractors. There needs to be well-credentialed expertise on the project team for every aspect of the work being proposed. Conduct a team meeting to get full buy-in on the work plan AND on the proposal-writing plan. Develop a schedule and assign

responsibilities for completion of the proposal. Immediately start the process of collecting team Curriculum Vitae and any required letters of support.

- **Obtain an outside, third-party review by MTIP.** Regardless of the proposal author's experience with proposal writing, this step helps ensure that the proposal is fully responsive to the instructions. Even the most experienced authors have a tendency to get "off point" as they work through the details and editing process. An outside eye can catch the drift and proposal non-compliance to solicitation requirements. A reviewer knowledgeable about the NASA SBIR program will invariably identify meaningful ways in which to enhance both the presentation and the content of the proposal. There is strong evidence that involving MTIP in the proposal-preparation process significantly improves the chance of funding.
- **Submit early.** In pre-planning the project and proposal, applicants should plan to submit their proposals at least two days prior to the final due date. Early submission avoids the possibility of server overload, which has hampered agencies in the past. It also gives applicants ample time to resolve any problems that arise during the electronic submission process.

READY FOR THE NEXT STEP?

This agency-specific SBIR guide has been prepared by the Montana Technology Innovation Partnership (MTIP) and does not imply endorsement from the U.S. Department of Education. A program of the Montana Department of Commerce, MTIP provides free coaching to Montana technology-based companies seeking help in applying to federal and state R&D and commercialization funding programs. For more information, contact the MTIP Program Manager at (406) 841-2749 or visit MTIP's website at www.mtip.mt.gov.